

GAO

Subcommittee  
Investigations,  
Committee on Energy and Commerce,  
U.S. House of Representatives

August 1981

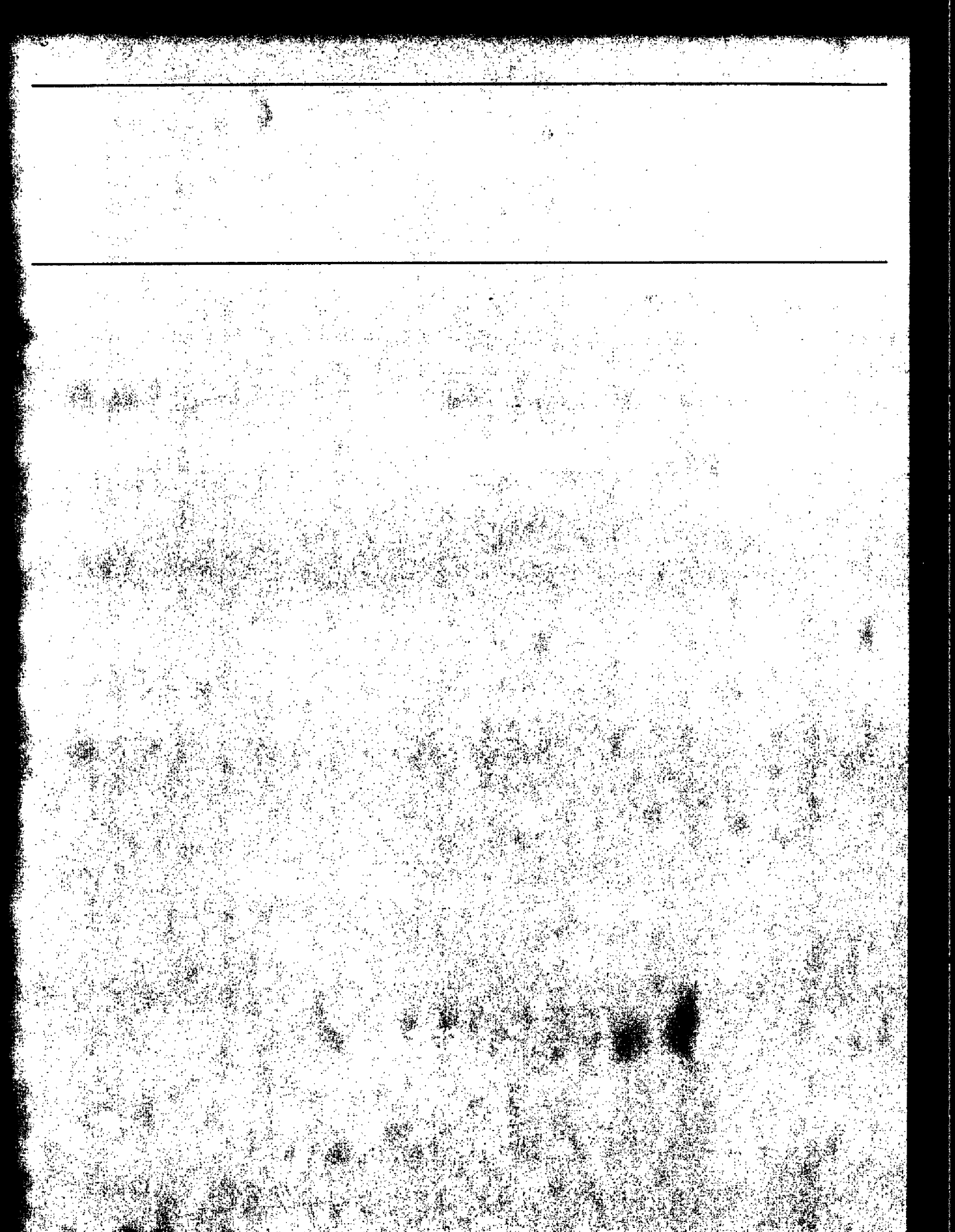
**SUPERFUND  
ACCOUNTS WITH  
ASSESSMENTS  
IN EXCESS AND OF  
ESTIMATED VALUE**

**RELEASED**  
RESTRICTED—Not to be released outside the  
General Accounting Office unless specifically  
approved by the Office of Congressional  
Relations.

AO/RCE/11/81

MSD066

144755





United States  
General Accounting Office  
Washington, D.C. 20548

**Resources, Community, and  
Economic Development Division**

B-244536

August 1, 1991

The Honorable John D. Dingell  
Chairman, Subcommittee on Oversight  
and Investigations  
Committee on Energy and Commerce  
House of Representatives

Dear Mr. Chairman:

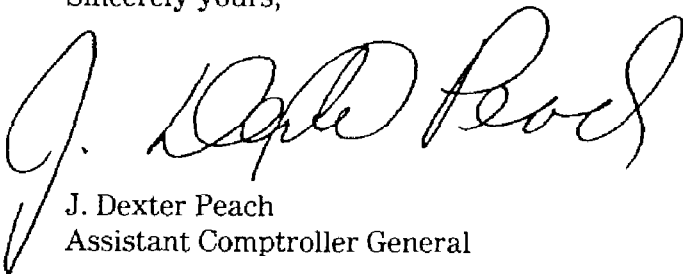
As you requested, we have assessed the quality and usefulness of health assessments prepared by the Agency for Toxic Substances and Disease Registry (ATSDR) on Superfund sites. The Superfund Amendments and Reauthorization Act required ATSDR to prepare assessments for all hazardous waste sites proposed for the Superfund program. The Environmental Protection Agency (EPA) is responsible for the actual cleanup of the sites.

This report discusses (1) how ATSDR prepared health assessments on sites proposed for Superfund through June 1988, (2) the results of a detailed evaluation of the quality of 15 of those assessments by a panel of public health experts commissioned by GAO, and (3) views of the usefulness of these assessments from EPA, state, and local officials responsible for monitoring or cleaning up these sites and from concerned citizens.

As arranged with your office, unless you publicly announce its contents earlier, we will make no further distribution of this report until 30 days after the date of this letter. At that time we will send copies to other appropriate congressional committees; the Administrators, ATSDR and EPA; and the Director, Office of Management and Budget. We will also make copies available to other interested parties.

This work was performed under the direction of Richard L. Hembra, Director, Environmental Protection Issues, who may be reached at (202) 275-6111. Other major contributors to this report are listed in appendix III.

Sincerely yours,



J. Dexter Peach  
Assistant Comptroller General

---

# Executive Summary

---

## Purpose

Hazardous wastes from industrial and other operations can contaminate disposal sites and surrounding areas, endangering local communities. In 1980 the Congress created the Agency for Toxic Substances and Disease Registry (ATSDR) to help determine the public health consequences of the worst hazardous waste sites—those included in the Environmental Protection Agency's (EPA) Superfund program. Because of concern about how well this function had been performed, the Chairman, Subcommittee on Oversight and Investigations, House Committee on Energy and Commerce, asked GAO to examine the quality and usefulness of ATSDR's health assessments.

---

## Background

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 created Superfund to clean up the nation's most dangerous hazardous waste sites and authorized the establishment of ATSDR. The agency was actually set up in 1983 in the Public Health Service, Department of Health and Human Services. The Superfund Amendments and Reauthorization Act of 1986 (SARA) set deadlines for completing ATSDR health assessments. ATSDR was to assess by December 1988 all sites in the Superfund program when the law was passed and new sites within 1 year of their being proposed for Superfund. As a result, ATSDR had to assess 951 Superfund sites by December 1988—a little over 2 years after SARA's passage. ATSDR developed assessments for 950 of the 951 sites, referred to as initial mandate sites, by the deadline and since then has assessed more than 200 sites subsequently added to Superfund.

SARA requires that assessments be based on such factors as the nature and extent of site contamination, the potential pathways of human exposure, the size and susceptibility of the community, and the effects of exposure. SARA lists two purposes for health assessments—helping to decide whether (1) exposure to a site's hazardous substances should be reduced and (2) follow-on health studies at a site should be conducted. The law requires ATSDR to provide its health assessments to EPA and to the states. ATSDR's role at Superfund sites is mostly advisory; EPA is in charge of actual cleanup operations.

GAO's review included an evaluation of ATSDR's assessment procedures; a critique of 15 assessments, selected as case studies in consultation with ATSDR, by a panel of health experts convened by GAO; and interviews with ATSDR, EPA, and state and local government officials and with community groups.

---

## Results in Brief

Because ATSDR health assessments have not fully evaluated the health risks of many Superfund sites, communities have not been adequately informed about possible health effects. Under pressure of the initial SARA mandate to assess 951 sites—about 80 percent of all current sites—in a little over 2 years, ATSDR limited the scope of its work and produced—in the opinion of ATSDR officials—assessments of poor or uneven quality. GAO's panel found that sampled assessments prepared under the initial mandate were seriously deficient as public health analyses. Later assessments examined by the panel were deemed improved in comparison with the initial group, while still having some problems in data or analysis.

ATSDR's health assessments generally have not been useful to EPA or to the state and local governments GAO contacted because the assessments usually did not add to EPA's own analysis of site risks or did not recommend actions that EPA said it would not have taken on its own. The assessments often have not contained enough data to permit ATSDR staff responsible for follow-on health studies to decide whether such studies were warranted. ATSDR has drafted new health assessment guidance for future assessments, which it believes will improve their quality and usefulness.

---

## Principal Findings

---

### Quality of Health Assessments

SARA's requirement that ATSDR quickly assess 951 Superfund sites came at a time when the agency was still relatively new and, in the opinion of Public Health Service reviewers, not staffed or organized for the job. To meet the deadline ATSDR wrote 785 assessments in the 15 months ending in December 1988 and labeled 165 previously prepared documents in its files as health assessments. To produce this volume of assessments, it had to ignore its own guidance requiring visits to sites as needed and limit its analysis to reviews of often incomplete or dated file material. The 165 documents on file that ATSDR counted as assessments included memorandums and studies not intended to be health assessments when written. Although some were several years old, they were not updated. GAO's panel of public health experts believed that all six of the initial mandate assessments they reviewed were seriously deficient overall. ATSDR officials admit that the quality of the early assessments is uneven and said they intend to revise some of them. However, because of higher

priorities, no timetable for this review has been established, and officials could not estimate when it would be completed.

After the rush to complete initial mandate assessments, ATSDR expanded the scope of its reviews, for example, by beginning to visit sites. GAO's panel examined nine assessments prepared after the initial mandate. Overall, the panel believed that they were much improved technically over the earlier assessments, but panelists continued to find deficiencies in evidence or analysis, such as unsupported conclusions, in five of the nine.

ATSDR believes that its new health assessment guidance requiring more data collection and increased consideration of community health concerns will improve the quality of assessments. In addition, in GAO's opinion, ATSDR needs to improve quality controls. Near the end of GAO's review, ATSDR established an internal quality review group, but given the history of problems with assessments, some independent peer review also seems needed as a check on the effectiveness of the new procedures and to spot any need for further corrections. Peer review could be done after assessments are issued if necessary to meet SARA's deadlines.

---

## Usefulness of Assessments

GAO's review raised questions about the usefulness of assessments. Like ATSDR, EPA, as the Superfund program manager, studies human exposure to hazardous substances from sites. Few EPA officials GAO interviewed thought that ATSDR's health assessments added anything to what EPA's own analyses revealed. Also, in the opinion of GAO panelists, the utility of assessments was limited by their overly general conclusions about possible site health risks. EPA and ATSDR have not coordinated well enough to make assessments more useful and reduce overlapping analyses.

In addition, because the assessments were often incomplete, they were of limited use for indicating needs for follow-on health studies. ATSDR health study officials had to supplement health assessments with their own investigations before they could determine the need for health studies.

ATSDR's recent revision of its draft health assessment guidance for the first time defines the principal audience for assessments as the "communities associated with the sites," including citizens groups, local leaders, and health professionals, although EPA and other government agencies will continue to be targets as well. ATSDR plans to make its assessments

---

more accessible to these communities and to involve them more in developing assessments. None of the citizens groups or citizens GAO contacted knew of the ATSDR assessments in GAO's sample. Two had seen other ATSDR assessments but did not find them useful. However, ATSDR officials think that expanded information requirements and better outreach being planned will produce more meaningful assessments.

The effectiveness of ATSDR's new procedures for preparing and communicating health assessments will not be apparent for some time. If, at the end of a reasonable period—for instance, a year—assessments have not proven useful to EPA, the local community, or others, the value of the current statutory requirement for ATSDR health assessments at each Superfund site may need to be reexamined.

---

## Recommendations

To ensure consistently acceptable quality for health assessments, GAO recommends that the Administrator, ATSDR, (1) arrange for at least a sample of assessments to be reviewed by outside, independent public health authorities and (2) develop plans to update past assessments, especially for the most potentially hazardous sites.

To improve the usefulness of ATSDR's assessments to EPA, GAO recommends that the Administrators of EPA and ATSDR set up an interagency work group to decide how the value of ATSDR assessments to EPA could be increased and duplicate analyses avoided.

---

## Matter for Congressional Consideration

The Congress may wish to consider reviewing the utility of ATSDR's health assessments after allowing sufficient time for ATSDR's new health assessment procedures to take effect. If at the end of this period assessments have not proven useful, the Congress may wish to reconsider whether SARA's requirement for an ATSDR health assessment of each Superfund site should be continued.

---

## Agency Comments

GAO discussed the report's contents with ATSDR and EPA officials and incorporated their comments where appropriate. The officials generally agreed with the report's findings. However, as agreed, GAO did not obtain official ATSDR or EPA comments on a draft of this report.

---

# Contents

---

Executive Summary		2
Chapter 1		8
Introduction	The Superfund Program	8
	ATSDR Health Assessments	9
	Objectives, Scope, and Methodology	10
Chapter 2		13
Many Superfund Sites	Quality Suffered in the Rush to Produce Early	13
Have Incomplete	Assessments	
Health Assessments	Later Assessments Were Improved	20
	Quality Control Inadequate	21
	No Schedule Established for Updating Old Assessments	22
Chapter 3		24
The Usefulness of	ATSDR Health Assessments Not Useful to EPA	24
ATSDR Health	Little State and Local Use of Sampled Health Assessments	29
Assessments Is	Health Assessments Were Not Complete Enough to	30
Questionable	Determine Need for Health Studies	
	Changes to ATSDR Procedures to Make Assessments More	31
	Useful	
Chapter 4		32
Conclusions and	Recommendations to the Administrators of EPA and	33
Recommendations	ATSDR	
	Matter for Consideration by the Congress	33
Appendixes		
	Appendix I: GAO's Panel Members	34
	Appendix II: Superfund Sites Covered by Sampled ATSDR	35
	Health Assessments	
	Appendix III: Major Contributors to This Report	37
Figure	Figure 3.1: ATSDR Classified Most Sites as Potential Risks	29

---



---

**Contents**

---

---

**Abbreviations**

ATSDR	Agency for Toxic Substances and Disease Registry
CDC	Centers for Disease Control
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
EPA	Environmental Protection Agency
GAO	General Accounting Office
NPL	National Priorities List
SARA	Superfund Amendments and Reauthorization Act of 1986
VOCs	volatile organic compounds

# Introduction

Accidental spills or intentional disposal of toxic industrial waste and other hazardous substances have contaminated thousands of sites throughout the United States. The hazardous substances escaping from these sites into the air, soil, groundwater, and surface water can pose serious health risks to the public. In 1980 the Congress enacted the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) to clean up the nation's worst hazardous waste sites. CERCLA created a fund, called the Superfund, to pay for site cleanup when the parties who caused the contamination could not be found or could not pay for the cleanup themselves. The Environmental Protection Agency (EPA) was assigned responsibility for administering the Superfund program. CERCLA also created the Agency for Toxic Substances and Disease Registry (ATSDR) to assess the public health effects of the sites.

## The Superfund Program

After identifying a potentially dangerous waste site, EPA subjects it to a series of increasingly detailed evaluations. These evaluations include examining already existing data and may include site inspections, monitoring, surveys, and tests. After EPA collects sufficient information, it scores sites using its own hazard ranking system. If a site scores high enough, EPA can propose it for the National Priorities List (NPL), EPA's official list of sites to be cleaned up under CERCLA authority. EPA publishes the names of sites which it proposes for the NPL in the Federal Register. If no one produces any new information that would cause the site's hazard ranking score to fall below the minimum qualifying level, the site is listed on the NPL. (The cleanup of sites that do not qualify for Superfund, if such cleanups are accomplished at all, depends on state, local, or private action.) After listing, EPA, or responsible parties under the guidance of an EPA project manager, perform a remedial investigation and feasibility study to define the nature and extent of site problems and evaluate options to correct them. An important component of the study is a risk assessment—an appraisal of the actual or potential effects of the site on human health and the environment. According to EPA procedures the risk assessment should estimate people's exposure to site contaminants and assess cancer risks and noncancer hazards.

As of October 1990 about 1,200 sites were on or proposed for the NPL. EPA expects to add about 1,000 sites to the list during the 1990s. It has made no estimate of the number of sites that could ultimately be listed, but expects the program to continue well into the next century. The Congress has authorized \$15.2 billion for the Superfund program since its inception.

## ATSDR Health Assessments

ATSDR was established in 1983 within the Public Health Service, Department of Health and Human Services. Its initial responsibilities included conducting health studies, laboratory projects, and chemical testing to determine relationships between exposure to toxic substances and illness. In 1986 the Superfund Amendments and Reauthorization Act (SARA) reauthorized CERCLA and expanded ATSDR's health responsibilities to include health assessments at Superfund sites, a function not specifically identified in the 1980 CERCLA legislation. ATSDR's budget and staff were increased because of its new responsibilities.

Health assessments are done either by ATSDR headquarters staff or by state agencies with which ATSDR has cooperative agreements. Under these agreements, which are sanctioned by SARA, ATSDR funds and trains staff from state agencies, usually state health departments, to conduct health assessments. In fiscal year 1990 ATSDR had cooperative agreements with 23 states that, according to officials, had about 80 percent of the NPL sites. ATSDR or state staff performing the health assessments are referred to as assessors.

According to SARA, the purpose of a health assessment is to help determine (1) whether actions need to be taken to reduce human exposure to a facility's hazardous substances and (2) whether additional information on human exposure should be acquired by conducting health studies or other methods. SARA defines health assessments to include preliminary assessments of risk to human health considering factors such as

- the nature and extent of contamination,
- the existence of potential pathways of human exposure,
- the comparison of expected human exposure levels to the short-term and long-term effects associated with identified hazardous substances, and
- existing morbidity and mortality data on diseases that may be associated with observed levels of exposure.

SARA requires the Administrator of ATSDR to provide the results of completed assessments and any recommendations for further actions to the EPA Administrator and each affected state. The EPA Administrator is not required to act on the results of an ATSDR health assessment unless the assessment concludes that a site poses a "significant" risk. Significant risk is present, according to ATSDR, when human exposure to dangerous levels of hazardous substances has occurred, is occurring, or is likely to occur in the short term. When ATSDR identifies a significant risk to

human health, the act directs EPA to reduce the exposure and eliminate or mitigate the risk.

ATSDR's fiscal 1991 budget authorized \$48.5 million and 255 staff. ATSDR estimated that almost \$13 million and 116 staff were devoted to the health assessment program in fiscal year 1990. As of March 1991 ATSDR had performed health assessments on over 1,100 hazardous waste sites proposed for the NPL.

ATSDR groups its assessments into two broad categories: initial mandate assessments and later assessments. The initial mandate assessments were those prepared to meet a SARA requirement that all sites in or proposed for the Superfund program by January 1987 be assessed by December 1988. There were 951 initial mandate assessments—the bulk of assessments done so far by ATSDR. At the time of our review, ATSDR was working on a group of 229 later assessments of sites proposed for Superfund in June 1988.

---

## Objectives, Scope, and Methodology

The Chairman, Subcommittee on Oversight and Investigations, House Committee on Energy and Commerce, requested that GAO examine ATSDR's progress in implementing its health-related responsibilities under CERCLA. On the basis of the Chairman's initial request and subsequent discussions with his office, we agreed to focus our evaluation primarily on the quality of ATSDR's health assessments and their usefulness to EPA and others.

As part of our analysis of the quality and usefulness of the health assessments, we used case studies. We selected 15 health assessments for Superfund sites in EPA's Atlanta, Chicago, and New York regions. (App. II lists the 15 sites.) These regions have more than 50 percent of the sites on the NPL.

We selected two health assessments from the initial mandate and three from the later group for each of the three regions. The selection of assessments within each group and region was random. Although many of the health assessments from the later groups were still in draft when we chose our sample, ATSDR requested that we include them to highlight the changes being made in the health assessment program. Officials admitted that the initial mandate assessments were not as thorough as the later assessments.

To evaluate the quality of our sample health assessments, we convened a panel of five public health experts to review them.<sup>1</sup> Before the panel members deliberated on each assessment, we provided them with background information on the site and how the assessment was prepared.

For each assessment we asked each panelist, on the basis of the information in the assessment, to comment on whether the assessment accurately and clearly communicated the health threat posed by the site and whether the conclusions and recommendations appeared appropriate in view of the site's condition as described in the assessment. We asked each panelist to discuss the reasoning behind the panelist's characterization of the quality of the health assessment and provide any suggestions for improvement.

We also appraised the quality of assessments by comparing their contents and the methods used to prepare them with the draft health assessment guidance ATSDR used during the time the assessments were written and its latest draft guidance. In addition, we discussed sampled assessments with EPA, state, and local government officials knowledgeable about the sites.

To evaluate the usefulness of each assessment we did the following:

- Identified how the EPA project manager responsible for the assessed site used the health assessment and any actions EPA took or was planning to take as a result of the assessment. If the project officer did not use the assessment, we obtained the officer's reasons for not using it and determined from what source the officer obtained information on the site's health risk.
- Identified the similarities and differences between ATSDR's health assessment and the corresponding EPA risk assessment, if available, to document potential duplication. To further identify potential duplication between these assessments, we compared the agencies' respective policies and procedures.
- Discussed each health assessment with appropriate state or local officials and community representatives to obtain their perspectives on its usefulness.

We performed most of our work at ATSDR headquarters in Atlanta, Georgia; EPA headquarters; three EPA regional offices; and three state health departments, one in each of the three EPA regions. We selected the

---

<sup>1</sup>See app. I for a list of the panel members.

Atlanta, Chicago, and New York EPA regions because, having a large percentage of the NPL sites, their staffs would have seen and had opportunities to use a large number of ATSDR health assessments.

We visited state health departments in Florida, Michigan, and New York. Each state had prepared one or more of the health assessments selected for a case study and had a cooperative agreement with ATSDR. We also contacted by telephone health or environmental officials in Illinois, Kentucky, New Jersey, Ohio, and Puerto Rico.

To obtain the perspectives of citizens about the health assessments, we contacted citizens or groups known by state or local health or environmental officials to be interested in the site cleanup. Chapter 3 discusses how we selected these community representatives.

Our audit work was conducted between September 1989 and January 1991 in accordance with generally accepted government auditing standards. We discussed our findings with ATSDR and EPA officials and incorporated their comments where appropriate. The officials generally agreed with the report's findings. As requested, we did not obtain formal comments from ATSDR or EPA on a draft of this report.

# Many Superfund Sites Have Incomplete Health Assessments

ATSDR health assessments have not fully evaluated the health risks of many Superfund sites. As a result, people potentially affected by the sites have not been given adequate information about the sites' possible health consequences. Under pressure of statutory deadlines requiring it to assess 951 sites—about 80 percent of all current sites—in 2 years, ATSDR limited the scope of the work. ATSDR virtually met the statutory deadlines, but only by (1) labeling as assessments, documents prepared before SARA's passage that were not intended to be full health assessments and (2) doing "desk" assessments not involving visits to sites, updates of old data, or contact with local health agencies and communities. Our panel of public health specialists found that all six ATSDR assessments prepared in response to the initial deadlines that they reviewed were seriously deficient as evaluations of the public health implications of the Superfund sites.

After working on the initial group of 951 sites, ATSDR began assessing an additional group of 229. ATSDR had more time to do these assessments and collected more data. Our panel found substantial improvement in the nine assessments they reviewed from this group, but noted continued deficiencies in evidence or analysis in five of the nine.

The ATSDR Assistant Administrator admits there were quality problems with the agency's initial health assessments. In the rush to complete these assessments, ATSDR dropped plans to do full internal quality checks on its assessments, and no review was made by outside experts. ATSDR has recently drafted procedures that officials said will improve the assessments by incorporating information obtained from visits to the sites, surveys of local health statistics, and discussions with affected communities. Officials also said that ATSDR will review previously published assessments for adequacy, but review plans have not been fully developed.

## Quality Suffered in the Rush to Produce Early Assessments

SARA charged ATSDR with performing health assessments (1) by December 10, 1988, for all sites on or proposed for the NPL before SARA was enacted and (2) within 1 year for sites proposed after SARA's enactment. These provisions required ATSDR to complete health assessments for 951 sites by December 1988, a little over 2 years after SARA's passage

---

**Chapter 2**  
**Many Superfund Sites Have Incomplete**  
**Health Assessments**

---

in October 1986. ATSDR refers to this group of sites as its initial mandate.<sup>1</sup>

Although several ATSDR officials thought the deadline for completing the initially mandated assessments was unachievable, top agency management committed to meeting it. ATSDR nearly met the initial mandate, drafting preliminary or final health assessments for 950 of the 951 initial mandate sites by the December 1988 deadline.<sup>2</sup> However, it did so only by labeling as health assessments, documents prepared before SARA's passage for purposes other than fully evaluating the public health risks of the sites and by limiting the scope of its work. The panel judged the 6 health assessments that it reviewed from this initial mandate group to be the worst in our sample of 15.

---

**ATSDR's Readiness to Meet**  
**Initial Mandate**

ATSDR's Deputy Assistant Administrator and its Health Assessment Division Director told us that SARA's initial health assessment mandate was unrealistic. In addition, an evaluation of ATSDR by the Centers for Disease Control's Management Analysis Branch concluded that the agency was unprepared to meet the initial mandate because of management and staffing problems.<sup>3</sup> The Branch's March 1987 report said that the deadline could not be met for five reasons:

- The "sheer magnitude of the task."
- Lack of trained staff.
- A new and unproven organizational structure.
- Lack of agreement about what a health assessment should consist of.
- An absence of controls to ensure that the agency stayed on track and was alerted to problem areas in sufficient time to take corrective action.

The ATSDR Associate Administrator agreed with the Branch report's finding in a July 10, 1987, letter he sent to the Administrator. He said,

The Study Team stated their belief that the SARA mandate for ATSDR to perform health assessments on all sites on the National Priority List by December 10, 1988,

---

<sup>1</sup>Under SARA's requirement ATSDR had to perform by December 1988 health assessments of 887 sites on or proposed for the NPL when SARA was enacted. Another 64 sites were proposed in January 1987 and had to be completed prior to the December 1988 deadline, making a total of 951 sites in the initial mandate.

<sup>2</sup>One site was not assessed because of an oversight.

<sup>3</sup>The Centers for Disease Control, like ATSDR, is a unit of the Public Health Service.



---

**Chapter 2**  
**Many Superfund Sites Have Incomplete**  
**Health Assessments**

---

will not be met. We concur with that conclusion for the reasons stated in their report.

According to the Associate Administrator, while the agency was doing everything it could to expedite health assessments, it did not expect to meet the initial mandate. But in December 1987, only a year before the SARA deadline, the ATSDR Administrator decided that the agency would have to meet the mandate. According to the Administrator's legal advisor, this decision was prompted by concern that ATSDR would be subject to citizens' suits if it did not comply with the deadline.

ATSDR had completed few assessments between SARA's passage and the decision to meet the initial mandate. In its annual report for fiscal year 1987, ATSDR said that it had completed 165 health assessments by September 30, 1987, but these were primarily limited evaluations prepared mostly before the passage of SARA. Therefore, to meet SARA's initial mandate, ATSDR had to do almost 800 health assessments in 15 months. Looking at ATSDR's subsequent work load helps to put the difficulty of this task into perspective. SARA required ATSDR to complete 229 health assessments in the 12 months ending June 1989 and 87 in 1990. It completed on time only 7 of the health assessments due by June 1989 and 28 of the assessments due in 1990.<sup>4</sup> EPA expects to add about 100 sites a year to Superfund during the 1990s, giving ATSDR an annual health assessment work load about one-eighth as large as it had in 1988.

---

**File Documents Counted as**  
**Assessments**

Prior to SARA's enactment, ATSDR and its predecessor unit, the Superfund Implementation Group, Center for Environmental Health, performed various activities in connection with Superfund sites, such as establishing registries of persons exposed to toxic substances and inventoring research on the health effects of toxic substances. ATSDR was not charged by law to do health assessments at all Superfund sites but, on request, advised EPA and others on site health issues.

After the passage of SARA, ATSDR expanded its health assessment unit to carry out its new assessment responsibilities. In mid-1987 a member of this unit was directed to review agency files to decide which already existing documents discussing site conditions, including those prepared

---

<sup>4</sup>ATSDR officials said they did not meet these 1989 and 1990 deadlines because the agency was busy finishing the initial mandate assessments and responding to health assessments requested by citizens and government officials. Additionally, ATSDR delayed assessments on 100 federal facilities while it worked out funding agreements with the Department of Defense, the military services, the Department of Energy, and other federal agencies.

---

**Chapter 2**  
**Many Superfund Sites Have Incomplete**  
**Health Assessments**

---

by the Superfund Implementation Group, might be considered health assessments. The 165 documents selected included memorandums from ATSDR officials to state or EPA officials discussing various aspects of the sites. These documents were not prepared as health assessments and did not always identify on-site contaminants or how contaminants could reach people, as SARA suggests. In addition, although some were up to several years old, the information on which they were based was not updated. Some contained no recommendations. All were prepared before ATSDR drafted health assessment guidance, and many were prepared even before agency officials had reached a common understanding of what a health assessment should be.

Some of the documents counted as health assessments were previously prepared "health consultations," which ATSDR's draft Health Assessment Guidance Manual says are distinct from health assessments. A health consultation, the manual says, "is a response from ATSDR to a specific question or specific request for information pertaining to a hazardous substance or facility (which includes waste sites)." According to the manual, "a health consultation often contains a time-critical element that necessitates a rapid response time. A health consultation is, therefore, a more limited response by ATSDR than a health assessment."

ATSDR has never formally reviewed the quality of the 165 "health assessments" it selected from existing records in 1987. However, in November 1989 one health assessor who was assigned to catalogue these documents rated them on their conformance with the draft health assessment guidance being used at that time. He judged that 66 (40 percent) of the 165 assessments were of "poor" or "questionable" quality. The others he thought were "o.k." The files contained no analysis to show how these judgments were made.

The health assessments that were poor or questionable, in the reviewer's opinion, included the following:

- A 1984 review by the Centers for Disease Control of a Massachusetts Health Department cancer mortality study was counted as an assessment of the New Bedford, Massachusetts Superfund site. The review did not even mention the site.
- The health assessment for the Compass Industries site, a 108-acre abandoned landfill in Tulsa, Oklahoma, was a two-page January 1987 ATSDR response to a request from EPA's regional office for advice on the selection of chemicals to be sampled for EPA's own public health evaluation of the site. The "assessment" did not discuss any of the risks identified by

EPA or any other potential health risks. Further, the assessment did not discuss other areas required of a health assessment, such as the means by which people can be exposed, the likelihood of exposure, and the health implications of the site.

- The health assessment on the Landsdowne site in the Philadelphia, Pennsylvania, area, a 1/2-acre site with a radiation-contaminated house, was a 1985 consultation advising EPA on which personal items the owner of a nearby residence could safely keep. The assessment does not address the NPL site itself.

Two of the health assessments reviewed by our panel were among these 165 documents. A brief description of one of the assessments and the panel's comments follow.

---

Juncos Landfill Site,  
Juncos, Puerto Rico

The Juncos Landfill is a closed municipal landfill in Puerto Rico that had been operated for 20 years. The air at the site was contaminated with heavy metals and volatile organic compounds. The groundwater and soil were contaminated with heavy metals, including elemental mercury spilled from and contained within large numbers of broken thermometers dumped at the landfill. An EPA profile of the site says that breathing the contaminated air and touching or accidentally ingesting the contaminated soil could lead to mercury poisoning and other health hazards.

ATSDR counted as a health assessment a 1984 memorandum from the Chief of the Superfund Implementation Group to an official of EPA's Region II. The memorandum analyzed information on the site supplied by EPA. According to the memorandum, the potential pathways for human exposure were direct access to the site, mercury carried into homes, vegetables grown on the landfill, leachate streams, and groundwater contamination. Homes were built around the northern boundary of the landfill, and access to the dump site was unlimited. Children who played in the landfill could be exposed to vapor from the exposed elemental mercury. The backyards of several homes extended into the landfill, and some residents had vegetable gardens dug into the side of the landfill. ATSDR considered the site a potential health concern.

According to our panelists the ATSDR health assessment described an alarming public health threat. Panelists were critical of ATSDR for not updating its 1984 review and for not categorizing it as more than a "potential" public health concern on the basis of the information it had on hand.

## Other Initial Mandate Sites

Having determined that it would count 165 documents in the files as health assessments, ATSDR and the 11 states with which it had cooperative agreements at the time still had 786 sites to assess in a little more than a year. Cooperative agreement states did 207 of these assessments; ATSDR did 578. To complete assessments on time, ATSDR limited its review and analysis. It did the assessments mainly in its own office in Atlanta by reviewing EPA files, the data in which were sometimes several years old.

ATSDR did not attempt to add to or update the file information or visit sites, although the guidance it drafted for the initial mandate assessments required field visits "as needed." The agency's current draft guidance, a revision of the draft in use when the initial mandate sites were being assessed, says that:

The site visit is an essential element of the health assessment process. The site visit allows the assessor to observe first hand the current conditions at the site. The assessor should note the current activities and land use at the site, public accessibility to the site, demographic characteristics of the community surrounding the site, and other information....

The deficiencies our panel found in these initial assessments included (1) inadequate descriptions or analyses of health risks, (2) failures to indicate whether communities had been exposed to contaminants, (3) overly general recommendations, and (4) inattention to the sufficiency of data. ATSDR's preliminary health assessment of the E. H. Schilling Landfill in Ohio, dated December 2, 1988, illustrates some of the panel's concerns.

### E. H. Schilling Landfill, Lawrence County, Ohio

The 3-acre E. H. Schilling Landfill site operated as an industrial waste landfill from 1969 until 1980. The landfill was licensed to accept only nonhazardous wastes but was closed in 1980 due to permit violations. Nickel had been detected in air near the landfill at levels exceeding federal standards. Arsenic and volatile organic compounds (VOCs) have been found in groundwater. Leachate, soil, and stream sediments are contaminated with VOCs, polycyclic aromatic hydrocarbons, and heavy metals. People who accidentally ingest contaminated groundwater, soil, or sediments may potentially suffer adverse health effects, according to EPA.

Approximately 1,500 people live within 3 miles of the site; the closest residence was within 1/4 mile of the site. Domestic water is taken from municipal wells and private wells. An unnamed stream carries run-off from the site into Winkler Run and the Ohio River.

ATSDR's assessment, which consisted of less than two and a half typed pages, noted that contamination had been found in surface waste but that other environmental media on and off site had not been evaluated. It said that "depending on the actual materials disposed of at this landfill, airborne vapors and particulate also may be pathways of concern." Our panelists said that the assessment was "terribly incomplete" and that while the assessment indicated a possible health problem, it could not be evaluated "because the data were not presented in a way which permits one to make any judgment." A panelist noted that the assessment did not discuss the health effects of the contaminants and did not make recommendations about what data were needed to make a health assessment.

The health assessment ATSDR prepared for the Bunker Hill Mining and Metallurgical site indicates that mistaken conclusions and recommendations can result from relying on file data with no field inspection.

**Bunker Hill Mining and  
Metallurgical Site, Shoshone  
County, Idaho**

ATSDR prepared a health assessment on the Bunker Hill Mining and Metallurgical facility for EPA comment in August 1988. Although the assessment recognized the site's health threat to nearby communities from lead contamination, the assessment understated the site's health risk because it did not consider dangers from unrestricted access to on-site hazards, such as open mine shafts and waste piles contaminated with health-threatening levels of arsenic and lead. The ATSDR assessor told us he was unaware of the on-site hazards because he did not visit the site before preparing the assessment.

ATSDR representatives did visit the site in July 1989 after concerned EPA staff requested the visit. During the site visit, the analysts observed a van on the site and saw tire tracks and footprints in various areas of the site, including the lead-contaminated slag piles. In addition, an EPA official told ATSDR representatives that he had previously seen trespassers driving around the site and walking around and entering buildings. As a result of the site visit, ATSDR upgraded its estimate of the site's health risk and issued a health advisory to EPA in October 1989 recommending that action be taken to secure the site. The assessor who visited the site in July 1989 said that if the site had been visited when the August 1988 assessment was prepared, the seriousness of the risk would have been identified and an advisory prompting EPA to act would have been issued earlier.

## Later Assessments Were Improved

In June 1988, while ATSDR was producing health assessments to meet the initial mandate, 229 more sites were proposed for the NPL. Since assessments for these sites were in process or had just been completed when we began our review, we selected nine of them as case studies of ATSDR's more recent work. Our panel found that, on the whole, these sampled assessments were much better technically than the initial mandate assessments, although panelists found deficiencies in five of the nine.

Two factors contributed to the improvement in the more recent health assessments. First, ATSDR had fewer sites to assess. Second, ATSDR relied less exclusively on EPA file information. According to the Deputy Director of the Health Assessment Division, ATSDR representatives visited each of the 229 sites during their assessments and contacted state or local health officials to discuss community health concerns and check for additional data on each site. There was evidence of field visits and contacts with state or local health officials in the files for each of our nine sampled assessments.

Nevertheless, panelists continued to find problems with the sufficiency of data, support for conclusions regarding health risks posed, or the appropriateness of recommendations. In addition, panelists said that overall the assessments did not fully address public health questions. One member said, "a pervasive problem even with the most recent [assessments] was [that] it didn't seem like the attempt to get the information that was available was made." Another said that "perhaps even most of [the assessments] are really inadequate for evaluation of the real hazard at the site [by a] remote reader."

Panelists' comments on ATSDR's health assessments of the Hi-Mill Manufacturing site in Michigan, and the Reilly Tar and Chemical Corporation site in Ohio, illustrate some problems they continued to find in the more recent assessments.

### Hi-Mill Manufacturing, Highland, Michigan

The Hi-Mill Manufacturing site is a 2-1/2-acre site bordering a recreation area and a marsh. The facility had fabricated tubular aluminum, copper, and brass parts for the air conditioning and refrigeration industries. Before 1983 wastewater from its operations was discharged into an on-site lagoon. Testing in the early 1980s revealed that groundwater near the lagoon was contaminated with aluminum, copper, chromium, and zinc and that marsh sediments had detectable levels of chromium, copper, nickel, and lead. The December 1989 draft assessment prepared for ATSDR by the Michigan Department of Health concluded that the site was a potential health concern because of possible human exposure to

hazardous substances that could cause adverse health effects. The assessment also noted that Hi-Mill employees might be exposed to contaminated groundwater and that exposure had occurred in the past.

Although this assessment was an improvement over the initial assessments, according to our panelists, they thought that the data presentation was poor and the assessment contained unsupported conclusions. One panelist commented that

This is another example of no context being provided....What's the issue here?....although there are indications that human exposure to on-site/off-site contaminants may be occurring and may have occurred in the past, the site is not being considered for follow-up health studies because there's no significant exposure. I mean, that's almost like a contradiction.

Another panelist noted "Again, I find the organization of this document [jumbled]. It's just thrown together. It's very difficult reading."

---

## Reilly Tar and Chemical Corporation, Dover, Ohio

The 4-acre Reilly Tar and Chemical Corporation site was the location of a coking plant and foundry from about 1910 until the late 1920s, and a coal tar refinery from 1932 until 1956. It has been vacant since then. Operations and waste disposal practices contaminated the soil and groundwater with petrochemicals. The site has been fenced to limit public access.

Our panelists thought the assessment was satisfactory with some exceptions—for example, its leaving open serious questions about groundwater contamination. The assessment said that an off-site groundwater sample indicated that contaminants might be migrating from the site and noted that six wells a little over a mile from the site had been closed by order of the Ohio EPA for reasons unknown to the assessor. Panelists thought the lack of explanation for the well closures was a major flaw in the assessment. For example, one panel member said that since the assessment was intended for the community, he was disturbed by its not giving reassurance that community drinking water was safe.

---

## Quality Control Inadequate

The assessments discussed above demonstrate a lack of adequate quality controls at ATSDR for the health assessment function. ATSDR had planned to have its health assessments checked by two reviewers with different scientific backgrounds, but according to the Chief of the Remedial Programs Branch, this plan often was not followed in the interest of

expediting the assessments or because of staff shortages. Assessments were often checked by only one internal reviewer, and some were not reviewed at all, according to one health assessor. Assessment files we selected showed evidence of internal review after drafts were prepared, but this review did not produce assessments that were adequate, in the view of our panelists.

In October 1990 ATSDR created an intra-agency health assessment review panel. According to the Director of the Division of Health Assessment, this panel will have representatives from all ATSDR divisions and will review all assessments before they are issued. This same official said he believes this panel will provide a necessary multidisciplinary review of health assessments. Because it was formed near the end of our field-work, we did not examine the operations of the review panel.

SARA requires that all ATSDR studies and research except health assessments be reviewed externally before being reported or adopted, a common quality control for scientific work. According to the ATSDR Deputy Assistant Administrator, SARA exempted assessments from peer review to speed up their release. But nothing in SARA would prohibit a review of health assessments by outside experts after issuance.

---

## No Schedule Established for Updating Old Assessments

ATSDR officials acknowledged that ATSDR's initial health assessments were often incomplete and their quality uneven. According to the Director of the Health Assessment Division, ATSDR plans to use the new procedures to redo the 165 health consultations or other documents the agency counted as health assessments to satisfy the initial SARA mandate. However, in April 1991 this same official said he still did not have a time schedule for completing the revision of these assessments and doubted whether many would be redone before 1992. The Division Chief also said ATSDR plans to review other initial health assessments when (1) EPA asks ATSDR to comment on its proposed site cleanup method or (2) ATSDR receives a completed EPA remedial investigation and feasibility study on a site.

ATSDR's review plans are informal and, with the exception of the 165 health assessments, the reviews of past health assessments will be limited. For example, ATSDR will re-examine a site for which EPA has proposed a cleanup method only to decide whether the method will mitigate the health risks identified in the assessment. ATSDR does not intend to rework assessments for these sites to bring them into compliance with its current health assessment procedures. When ATSDR re-evaluates a site



---

**Chapter 2**  
**Many Superfund Sites Have Incomplete**  
**Health Assessments**

---

after reviewing a remedial investigation and feasibility study, it will not do a full re-evaluation unless the study discloses significant new information or risks not previously considered or identified by ATSDR.

# The Usefulness of ATSDR Health Assessments Is Questionable

ATSDR's health assessments generally have not been useful to EPA or to the state and local governments and community representatives we contacted. SARA requires that ATSDR send the assessments to EPA and to the states and says that the purpose of assessments is to (1) assist EPA to determine whether actions are needed to reduce or mitigate human exposure to hazardous substances (e.g., provision of alternate water supply or relocation of individuals) and (2) indicate a need for more detailed health studies or other health monitoring techniques. However, EPA usually has not used ATSDR's assessments because they have not added to EPA's own analyses of site risks. Also, the assessments have not contained enough data to permit ATSDR staff responsible for follow-on health studies to decide whether these studies were warranted. Most state and local health officials and community representatives we contacted regarding the 15 sampled assessments did not know about ATSDR's assessment for their local site or, if they did, thought it did not add to their understanding of the site. In contrast to health assessments, EPA found ATSDR's health consultations useful.

In recently drafted health assessment guidance, ATSDR defined the principal target of its assessments as "the informed community associated with the site" (citizens groups, local leaders, and health professionals). Officials expect that ATSDR's expanded requirements for developing health assessments and better community liaison will make assessments more useful to this audience.

---

## ATSDR Health Assessments Not Useful to EPA

EPA officials in charge of cleaning up the Superfund sites covered by our sampled health assessments said that assessments were not useful to them. In addition, headquarters and regional EPA officials said that ATSDR's assessments as a group did not add much to what they already knew from their own reviews of the sites.

---

## Sampled Health Assessments Were Not Useful

EPA project managers for 10 of the 15 Superfund sites included in our sample said that ATSDR's health assessments were not useful to them primarily because (1) the assessments duplicated EPA's own information and (2) recommended actions EPA already planned or that were required by EPA policy. Of the five project managers who found assessments useful, four thought their primary value was as a "second opinion" of EPA's own analyses. Only one said an assessment provided any new information. The 15 assessments made a total of 50 recommendations to EPA, 44 of which were already planned or required by EPA policy. Of the six remaining recommendations, EPA officials said only two were being

considered for action. Three others were beyond Superfund's authority, EPA officials said, and one was considered unrealistic by both EPA officials and ATSDR management officials.

The ATSDR health assessment for the General Tire and Rubber site, one of our sampled sites from the group of 229 assessed after the initial mandate, illustrates why EPA did not find the assessments useful.

---

### General Tire and Rubber Site, Mayfield, Kentucky

The General Tire and Rubber Company discarded hazardous and other plant wastes in a landfill from 1969 to 1979. The landfill closed in 1984. ATSDR's June 1990 assessment stated that groundwater was a potential pathway to human exposure.

Our review of EPA's project files showed that they contained all the sources of information used to prepare the ATSDR assessment. The assessment was based largely on material EPA collected and analyzed when deciding whether the site should be proposed for the NPL. In addition, five of the assessment's six recommendations were already in EPA's February 1990 draft work plan for the site. The assessment recommended that EPA test for site contaminants that project managers are required to test for by EPA's own remedial investigation procedures. Another recommendation was to expand off-site groundwater monitoring to better understand groundwater flow and the migration of contaminants. This monitoring had already been included in EPA's work plan for the site. The one health assessment recommendation not in the work plan, that EPA test for substances below health concern levels, was unrealistic, according to the EPA site project manager and ATSDR officials. The ATSDR assessor acknowledged that EPA would normally do most of the assessment's recommendations but said such recommendations were needed to ensure that EPA followed its own procedures.

---

### Health Consultations Well Regarded by EPA

In contrast to their view of health assessments, EPA officials found ATSDR's health consultations, i.e., advice EPA solicits from ATSDR on specific public health issues at particular Superfund sites, valuable.

Our review did not include a full evaluation of health consultations, but we did observe instances, such as at the Radium Chemical site, of their value to EPA.

The Radium Chemical Company site is a building in New York City that had been used to manufacture needles containing radium, and other

medical devices used in cancer research. The interior of the building, which was 15 feet from a heavily traveled expressway, was highly contaminated with radium. A Department of Energy evaluation of the site concluded that an accident could release radium into the environment, threatening about 27,000 people. Although EPA recognized the threat, the EPA project manager told GAO the site was not eligible for Superfund because the building was not actually releasing radioactivity. EPA contacted ATSDR to request a health consultation. ATSDR officials agreed it posed a significant health risk and were concerned that an intruder could gain access to the building and remove some of the radioactive materials. ATSDR issued a health advisory in February 1989. In August 1989, citing this advisory, EPA proposed placing Radium Chemical Company site on the NPL, and in November 1989 the site listing became final. The EPA project manager told us the site could not have been proposed for listing without ATSDR's health advisory. In June 1990 EPA decided to demolish and decontaminate the site.

An ATSDR health consultation also prompted EPA action at the Ciba-Geigy site in Dover Township, New Jersey, where the company produced a variety of compounds such as organic pigments, dyestuffs, and epoxy resins. In early 1988 officials from EPA's New York region requested health consultations from ATSDR after elevated levels of lead and other contaminants were found in residential well water near the site. EPA accepted and implemented ATSDR recommendations for a new water supply for the affected residents following the health consultations.

---

### Reasons for Limited Usefulness of Health Assessments

A number of factors have limited the usefulness of ATSDR health assessments to EPA. These include (1) ATSDR's heavy reliance on EPA file data when preparing its initial mandate assessments, (2) the overlap between ATSDR's health assessments and EPA's risk assessments, and (3) ATSDR's classification of most Superfund sites into a broad "potential health risk" category.

As discussed in chapter 2, ATSDR prepared most of its initial mandate assessments by reviewing information from EPA's files. It did not usually supplement EPA's data with any evidence developed on its own. In addition, ATSDR's analyses of public health risks largely overlapped the health analyses EPA made as part of its site risk assessments. According to EPA almost all EPA regions employ health specialists, such as toxicologists, to assist Superfund project managers in performing these risk assessments. EPA's Human Health Evaluation Manual describes how it

develops health risk information for risk assessments, listing the following steps:

- Gather site data and identify potential chemicals of concern.
- Analyze contaminated releases.
- Identify exposed populations and pathways of exposure.
- Estimate exposure concentrations.
- Identify health effects of the contaminants.
- Characterize the potential for adverse health effects (including estimates of cancer risks and noncancer hazards).

EPA's manual, while noting that ATSDR's health assessments follow the same general risk assessment framework as the EPA human health evaluation, attempts to distinguish the two studies. It says that "ATSDR health assessments, although they may employ quantitative data, are more qualitative in nature." It says that the health assessments discuss "especially sensitive populations, toxic mechanisms, and possible disease outcome." However, our sampled health assessments did not always discuss these factors. One of our panel members thought that most of the sampled ATSDR health assessments were, in fact, restatements of EPA's risk assessments. ATSDR's Assistant Administrator and his Deputy told us that the distinction between the agency's health assessments and EPA's assessments was unclear and acknowledged that assessments often had been "second opinions" of EPA's own analyses.

Although both EPA and ATSDR officials are aware that the ATSDR health assessments have not been useful to EPA, the two agencies have not worked together successfully to increase their usefulness. EPA officials we interviewed generally did not offer ideas for improving the health assessments' usefulness to EPA. The Deputy Director of EPA's Hazardous Site Division told us that when she canvassed EPA regions for suggestions on how to improve health assessments, she did not get a response. The Deputy Director of EPA's Office of Emergency and Remedial Response told us that since SARA's passage EPA officials have often been unsure about how they were to use health assessments or what to expect from them. Also, in two of the regions we visited, Superfund officials confused ATSDR health assessments with its health consultations.

Further, working relationships between ATSDR and EPA vary by region. EPA Superfund officials in Chicago told us that ATSDR health assessments were not useful. These officials said they would not welcome ATSDR involvement or comment in early site planning activities, such as the development of work plans, because EPA had responsibility for site

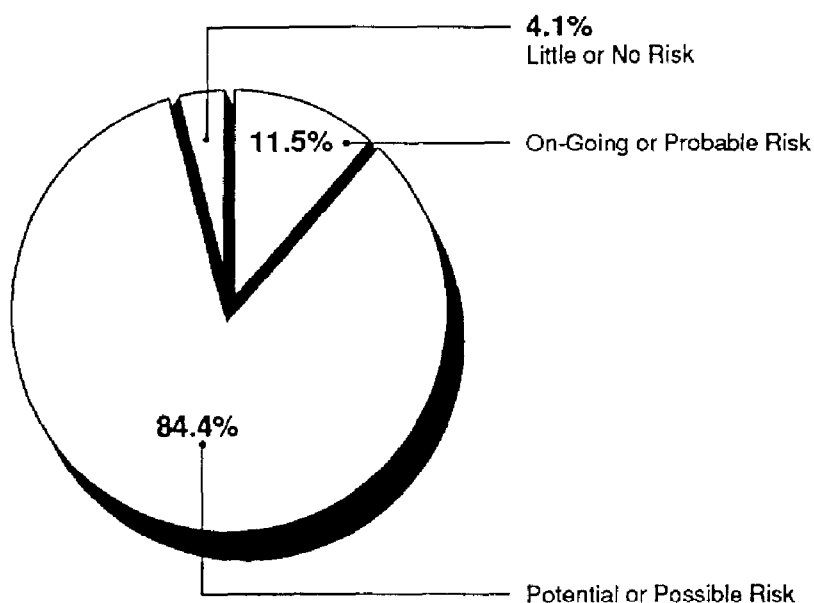
cleanup. In their view ATSDR should concentrate its efforts on addressing citizens' site-related health concerns. EPA Superfund officials in the New York Regional Office said they had a much better working relationship with ATSDR staff. They regularly requested comment from regional ATSDR officials and indicated an willingness to consider greater ATSDR involvement in early site planning activities, including working with the community.

ATSDR's health assessments have also been of limited use to EPA because they reported few health emergencies and labeled most sites under a broad "potential" concern category. SARA does not require EPA to act on the results of an ATSDR health assessment unless the assessment concludes that a facility poses a "significant" risk. ATSDR identified only 13 sites from the initial 951 it assessed as significant health risks.<sup>1</sup> The agency classified the severity of the health risks posed by those sites in three groups: "ongoing or probable," "possible or potential," or "little or none." It concluded that 109 of the 951 sites were "ongoing or probable" health risks, 803 were "potential or possible," and 39 were of "little or no" risk. (See fig. 3.1.) Our panelists thought that the value of the assessments was limited by their grouping such a high percentage (84 percent) of the initial mandate sites in the potential or possible category. One panel member said "regardless of the wide diversity of sites that we studied [the assessments] come up with the same conclusion: that there is a potential problem." Another panelist said that he was not confident after reading the sampled assessments that ATSDR had identified all serious sites.

---

<sup>1</sup>Our work did not provide a basis for determining the number of sites that should have been labelled significant health risks.

Figure 3.1: ATSDR Classified Most Sites  
as Potential Risks



Source: ATSDR

## Little State and Local Use of Sampled Health Assessments

SARA directed ATSDR to provide copies of its health assessments to each affected state. But most of the state and local government officials and concerned private citizens we contacted either were not familiar with health assessments or, if they had seen the assessments, did not find them useful.

We asked ATSDR and EPA officials for the names of state and local government officials who would be knowledgeable about the 15 sampled sites. We also checked with state officials for a local government contact. In total we were referred to 36 people. We were able to contact 34 people, including 18 in local governments, usually officials of health or environmental departments, who might be familiar with the sampled Superfund site in their jurisdiction. For example, we talked to a senior environmental engineer of the Du Page County Health Department about the health assessment for the Lenz Oil Site in Illinois. We discussed the assessment of the Fairlawn Wellfield Site, New Jersey, with a health officer and an environmental specialist of the Borough of Fairlawn Health Department.

Of the 34 officials we interviewed, 5 said ATSDR's health assessments were useful, at least as a check on EPA's work; 4 said they were not useful; and the others did not know of ATSDR or had never seen an ATSDR health assessment. The four officials who thought the assessments were not useful said that the assessments duplicated information they already had from EPA or said they thought they were too vague.

Through discussions with ATSDR, EPA, and state and local officials, we identified six sites in our sample about which citizens or local action organizations, such as the Eastern Michigan Environmental Action Council, had recently expressed interest. We were able to contact sources for five of the six sites. Of the sources contacted, none were familiar with the sampled ATSDR health assessments. Two had seen other ATSDR assessments but said the assessments were not useful because they were not specific and did not address local health concerns.

---

## Health Assessments Were Not Complete Enough to Determine Need for Health Studies

SARA states that one of the principal purposes of a health assessment is to assist in determining whether more detailed health studies are warranted. This purpose has not been fully achieved. The Director of ATSDR's Division of Health Studies told us that the initial health assessments contributed less than expected to detailed health studies because they did not contain information needed to make a determination.

The Director said that his Division examines "final" health assessments for leads about whether health studies should be done. As of August 1990 ATSDR had classified only 369 of its assessments as final; the others were still considered preliminary. Through fiscal year 1990 the Division concluded that 62 of the 369 final assessments reported high contaminant levels or other site conditions suggesting that more detailed health studies might be needed. However, because the information in all 62 assessments was incomplete, health studies officials could not decide whether health studies were needed without visiting sites, obtaining data from state and local sources, or taking other steps. At the time of our review, the Division had completed this additional work for 34 of the 62 sites and had selected 9 sites for health studies.



---

## Changes to ATSDR Procedures to Make Assessments More Useful

As discussed in chapter 2, ATSDR has redrafted its health assessment guidance to require that future health assessments emphasize community health concerns and consider existing community health statistics, in addition to the environmental data it relied on for its earlier assessments. According to the ATSDR Assistant Administrator, the new procedures will lessen ATSDR's dependence on EPA information and result in assessments that go beyond EPA's risk assessments. EPA's risk assessments do not capture community health statistics to any great extent, and according to the EPA Community Relations Coordinator, EPA generally does not have significant contact with affected communities within the time ATSDR is required to complete its health assessments. Also, ATSDR has revised its health risk classifications to allow more precise characterization of risks.

In addition, in the opinion of ATSDR officials, the expanded health assessments will be more useful to state and local health officials and communities. ATSDR's recently redrafted guidance defines the principal audience for its assessments to include these groups. The agency plans to announce the issuance of its health assessments in local newspapers, publish them in the Federal Register for public comment, and distribute them to local libraries. ATSDR also intends to create a Community Involvement Liaison position to improve its community relations.

---

# Conclusions and Recommendations

---

In response to SARA's requirement for health assessments within 2 years on 80 percent of current Superfund sites, ATSDR performed abbreviated reviews that did not fully answer questions about the public health implications of the sites. Agency officials admit that assessments were not as thorough as they should have been and indicated that some of these earlier assessments will be reviewed and revised, although they could not say when revisions would be completed.

It may not be feasible or necessary to redo all initial mandate assessments, but ATSDR does need to establish a formal plan to ensure that assessments on sites with the greatest potential for risk to human health get a thorough re-evaluation using its newly proposed guidance. Such a plan would establish review priorities and responsibilities and determine the resources needed to get the job done within a specified time.

Problems with the quality of initial mandate assessments, as well as deficiencies that our panel continued to find with later assessments, indicate that ATSDR needs to adopt controls on the quality of its work. Because of time pressures ATSDR did not use an internal quality review group for assessments during the period when assessments we selected were prepared, but it has recently established an internal quality review program. However, in view of the persistence of quality problems beyond the initial assessments, there is also a need for an independent outside review board to check at least a sample of assessments to ensure that the recent changes the agency has made are actually working. The outside peer review could be done after assessments are issued, if time requirements prevent a preissuance review.

Beyond the technical quality of the assessments, our review raised questions about their usefulness. EPA has seldom used the assessments, and most local officials and community representatives did not value the assessments highly, if they knew of them at all. ATSDR officials think the expanded information gathering required under its new procedures and better community outreach will produce more useful assessments. However, if assessments are to become more useful and duplication of effort avoided, ATSDR will need to work better with EPA. The two agencies have made some past attempts to resolve the problem but need to focus again on the issue by setting up an interagency work group to agree on agency roles and decide how the health assessments can best contribute to understanding the health risks of Superfund sites.

The effectiveness of ATSDR's new procedures for preparing and communicating health assessments will not be apparent for some time. If at the

end of a reasonable period—possibly 1 year—assessments have not proven useful to EPA, the local community, or others, the value of the current legislative mandate for ATSDR health assessments at every Superfund site would need to be reexamined.

---

## Recommendations to the Administrators of EPA and ATSDR

To ensure consistently acceptable quality of health assessments, we recommend that the Administrator of ATSDR:

- Develop a plan to update past assessments. The plan should contain a time schedule for revising assessments and a statement of the resources needed to meet it and should ensure that the most potentially hazardous sites are re-examined in accordance with the agency's current guidance.
- Arrange for at least a sample of future assessments to be reviewed by outside, independent public health professionals.

To improve the usefulness of ATSDR's assessments to EPA, we recommend that the Administrators of both agencies set up an interagency work group to review how the value of ATSDR assessments to EPA could be increased and duplicate analyses avoided.

---

## Matter for Consideration by the Congress

The Congress may wish to consider reviewing the utility of ATSDR's health assessments after allowing sufficient time for ATSDR's new health assessment procedures to take effect. If, at the end of this period, assessments have not proven useful, the Congress may wish to reconsider whether SARA's requirement for an ATSDR assessment of the public health effects of each Superfund site should be continued.

---

# GAO's Panel Members

---

Dr. Roy E. Albert	Professor of Environmental Health and Chairman, Department of Environmental Health and Kettering Laboratory University of Cincinnati Medical Center Cincinnati, Ohio
Dr. Thomas A. Burke	Assistant Professor Department of Health Policy and Management Johns Hopkins University Baltimore, Maryland
Dr. David M. Ozonoff	Professor of Public Health and Chair, Environmental Health Department Boston University School of Public Health Professor, Department of Socio-Medical Sciences and Community Medicine Boston University School of Medicine Boston, Massachusetts
Dr. Joel G. Pounds	Associate Professor, Institute of Chemical Toxicology Wayne State University Detroit, Michigan
Mr. Charles D. Treser	Lecturer, Department of Environmental Health School of Public Health and Community Medicine University of Washington Seattle, Washington

---

# Superfund Sites Covered by Sampled ATSDR Health Assessments

---

Sherwood Medical Industries  
Deland, Florida  
September 1988<sup>a</sup>

E. H. Schilling Landfill  
Lawrence County, Ohio  
December 1988<sup>a</sup>

Fairlawn Wellfield  
Fairlawn, New Jersey  
January 1989<sup>a</sup>

Spiegelberg and Rasmussen Dump  
Green Oak Township, Michigan  
February 1989<sup>a</sup>

Juncos Landfill  
Juncos, Puerto Rico  
April 1984<sup>a</sup>

Distler Farms  
Jefferson County, Kentucky  
November 1985<sup>a</sup>

General Tire and Rubber Company  
Mayfield, Kentucky  
June 1990<sup>a</sup>

Hi-Mill Manufacturing  
Highland, Michigan  
December 1989<sup>a</sup>

Sidney Landfill  
Sidney, New York  
March 1990<sup>a</sup>

C & J Disposal  
Eaton, New York  
March 1990<sup>a</sup>

Reilly Tar and Chemical Corporation  
Dover, Ohio  
March 1990<sup>a</sup>

---

**Appendix II**  
**Superfund Sites Covered by Sampled ATSDR**  
**Health Assessments**

---

Kauffman and Minter  
Jobstown, New Jersey  
May 1989<sup>a</sup>

Wilson Concepts  
Pompano Beach, Florida  
March 1990<sup>a</sup>

Lenz Oil  
Lemont, Illinois  
April 1990<sup>a</sup>

FCX Statesville  
Statesville, North Carolina  
Undated<sup>a</sup>

<sup>a</sup>Date of assessment.

---

# Major Contributors to This Report

---

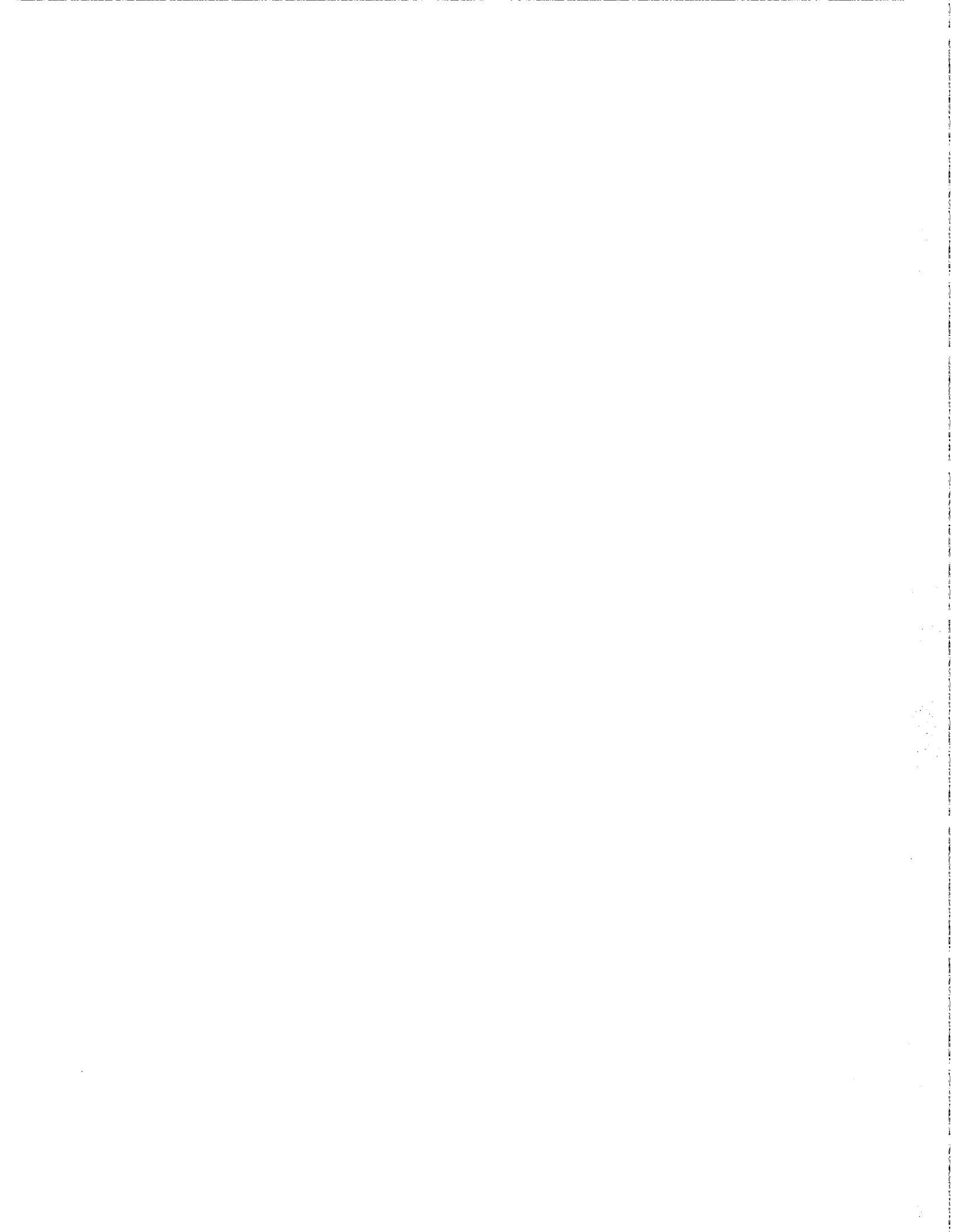
Resources,  
Community, and  
Economic  
Development Division,  
Washington, D.C.

Peter F. Guerrero, Associate Director  
Barry Hill, Assistant Director  
James Donaghy, Assignment Manager

---

Atlanta Regional  
Office

John Boyle, Regional Management Representative  
Frank C. Smith, Evaluator-in-Charge  
Cherie M. Starck, Site Senior  
Graham Rawsthorn, Staff Evaluator  
Sara Bingham, Writer-Editor





Additional copies  
of this report, including  
photocopies, are available  
from the National Technical  
Information Service, Springfield,  
Virginia 22161. Additional copies to be  
ordered from NTIS.

**United States  
General Accounting Office  
Washington, D.C. 20548**

**Official Business  
Penalty for Private Use \$300**

**First-Class Mail  
Postage & Fees Paid  
GAO  
Permit No. G100**